

Claims

1. A stabiliser for attachment to a ladder or step ladder which comprises two stiles with rungs between them which stabiliser comprises (i) a stabiliser arm (ii) an attachment means for attaching the arm which means incorporates a hinge with the axis of the hinge at an angle to the vertical line of the stile to which it is connected so that, in use, the stay swings outwardly and rearwardly from the stile (iii) a locking means for locking the arm in the open position (iv) a load transfer and locating means for transferring a load from the stabiliser arm to the stile and locating the end of the arm on the stile when the stabiliser arm is in the open position and in which, when the arm is attached to the stile of a ladder and the hinge is in the closed position, the stabiliser arm is located along the stile of the ladder and when going from the closed to the open position the foot of the stabiliser arm moves in an arcuate path.
2. A stabiliser as claimed in claim 1 in which the attachment means comprises a plate which has a means for attaching the plate to a stile of a ladder and the plate comprises the load transfer and locating means so that the locating means locates the end of the arm on the plate when the stabiliser arm is in the open position.
3. A stabiliser as claimed in claim 2 in which there are spacer blocks which fit between the plate and the stile of the ladder.
4. A stabiliser system as claimed in claims 2 or 3 in which the hinge axis is parallel to the main plate.
5. A stabiliser system as claimed in any one of claims 1 to 4 in which the hinge axis is angled out from the ladder stile so that in use the hinge axis is at an angle to the outer face of the ladder stiles forming a compound angle to the stile.

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6. A stabiliser system as claimed in any one of the preceding claims in which there are hinge stops limiting movement of the hinge.
7. A stabiliser system as claimed in any one of the preceding claims in which the
5 hinge axis can rotate between set positions of 70 to 170 degrees to the ladder stile.
8. A stabiliser system as claimed in any one of claims 2 to 7 in which there is a load transfer and locating means for transferring a load from the stabiliser arm to the stile and locating the end of the arm or a hinge block on the main plate when the stabiliser
10 arm is in the open position.
9. A ladder stabiliser as claimed in claim 8 in which the load transfer and locating means comprises at least one flange on the main plate against which the end of the hinge block fits and which locates the end of the hinge block in contact with the main
15 plate.
10. A ladder stabiliser as claimed in claim 8 in which the load transfer and locating means comprises a recess formed on the main plate with at least two defined sides which locates and holds the end of the stabiliser arm in position against the main
20 plate.
11. A ladder stabiliser as claimed in any one of claims 2 to 10 in which there is a locking means which locks the stabiliser arm against the main plate.
12. A ladder stabiliser as claimed in claim 11 in which the locking means comprises a
25 bolt on the main plate which cooperates with a hole or slot in the end of the stabiliser arm.
13. A stabiliser for a ladder, said ladder comprising a first stile and a second stile with
30 rungs extending therebetween, and said stabiliser comprising an arm having a first

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end mountable on said first stile and a second end adapted to bear on the ground, said arm when mounted on the said first stile being moveable between a first stowed position in which it extends substantially parallel to said first stile to an operative position in which, in use, said second end bears on the ground to one side and behind the foot of said ladder, characterised in that said first end is mountable to said first stile via a hinge pin which can be attached to said first stile and is permanently inclined to the longitudinal axis of said stile.

14. A stabiliser system as claimed in any one of the preceding claims in which there are locking means able to lock the hinge in the fully open or closed positions and intermediate positions therebetween.

15. A stabiliser system as claimed in claim 14 in which the locking means comprises a spring loaded plunger or rotating cam device located on the main plate and engaging into notches, holes or cut-outs in the hinge block.

16. A stabiliser system as claimed in any one of the preceding claims in which, in the fully open position, the hinge block engages against a stop attached to the ladder stile or main plate which stop can be in line with the main plate or can be part of the main plate.

17. A stabiliser system as claimed in any one of the preceding claims in which there is a hinge block rigidly attached to the stabiliser arm.

18. A stabiliser system as claimed in any one of the preceding claims in which the hinge is attached to the stabiliser arm through a secondary hinge, the axis of which secondary hinge is at an angle to the axis of the main hinge in the same plane.

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19. A stabiliser system as claimed in claim 18 in which the axis of the secondary hinge is at an angle to the axis of the main hinge in a plane which is at an angle to the plane of the axis of the main hinge.
- 5 20. A stabiliser system as claimed in any one of the preceding claims in which there is a folding stay, one end of which is pivotally attached to the stabiliser arm at a distance spaced apart from the hinge and the other end of which is attachable to the stile of the ladder a distance spaced apart from the attachment position of the hinge.
- 10 21. A ladder stabiliser as claimed in claim 20 in which, when the stabiliser arm is attached to the stile of a ladder and the stay is connected to the stile of the ladder a distance above the attachment position of the hinge and the hinge is in the open position the stabiliser arm is located outwardly and rearwardly from the stile of the ladder and the stay locks and locates the stabiliser arm in position.
- 15 22. A ladder stabiliser as claimed in claims 20 or 21 in which the folding stay has a length adjusting means which can adjust the length of the stay and, in the closed position, the stay folds up within the raised stabiliser arm.
- 20 23. A ladder stabiliser as claimed in claim 22 in which the length adjusting means comprises a ratchet means.
24. A ladder stabiliser as claimed in any one of the preceding claims in which there is a flexible tie adjacent to the end of the stabiliser arm remote from the hinge which is
- 25 attachable to the stile of the ladder.
25. A ladder stabiliser as claimed in any one of the preceding claims in which the main longitudinal components of the device is constructed of extruded and hollow sections and there are solid inserts in the box sections at the hinge end of the stay to
- 30 provide support for the attachment of the hinges and other fittings.

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26. A ladder stabiliser as claimed in any one of the preceding claims in which on the lower end of the arm is mounted a foot component that is fixed or that allows movement in a plurality of directions.

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27. A stabiliser as claimed in any one of the preceding claims in which the length of the stabiliser arm is adjustable.

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28. A stabiliser as claimed in any one of the preceding claims in which there is a clip which can hold the arms in the inoperative position against the stile for storage and transport.

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29. A ladder having a stabiliser system as claimed in any one of the preceding claims attached to it.

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30. In combination, a ladder and a stabiliser therefor, said ladder comprising a first stile and a second stile with rungs extending therebetween, and said stabiliser comprising an arm having a first end mounted on said first stile and a second end adapted to bear on the ground, said arm being moveable between a first stowed position in which it extends substantially parallel to said first stile to an operative position in which, in use, said second end bears on the ground to one side and behind the foot of said ladder, characterised in that said first end is mounted to said first stile via a hinge pin which is mounted on said first stile and is permanently inclined to the longitudinal axis of said stile.

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